

Certificate of Compliance

Certificate: 70218631

Master Contract: 259077

Project:

80230289

Date Issued: 2024-12-17

Issued to:

ALTENERGY POWER SYSTEM INC.

Building 2, No. 522, Yatai Road, Nanhu District

Jiaxing City, Zhejiang, 314050

CHINA

Attention: Kevin Lu

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only



Issued by: Hart Ca

Hart Cai

PRODUCTS

CLASS 5311 09 - POWER SUPPLIES - Distributed Generation Power Systems Equipment CLASS 5311 89 - POWER SUPPLIES - Distributed Generation Power Systems Equipment - Certified to U.S. Standards

APsmart Rapid Shutdown System:

Model	Attenuators	Initiation Device	System Ratings
Type-A	RSD-S-PLC-A	Transmitter-PLC	System voltage 1000Vdc, Attenuators Input:
			8~80Vdc, 15Amax per module, 15A max input
			short circuit. Attenuators Output: 8~80Vdc,
			15Amax, 800W max per module.
			Rapid shutdown time limit 15s.
			Initiated by the loss of AC power
Type-B	RSD-S-PLC-B	Transmitter-PLC	System voltage 1500Vdc, Attenuators Input:
			8~80Vdc, 15Amax per module, 15A max input
			short circuit. Attenuators Output: 8~80Vdc,
			15Amax, 800W max per module.
			Rapid shutdown time limit 15s.
			Initiated by the loss of AC power



Type-C	RSD-S-PLC-A	Transmitter-PLC-PCBA	System voltage 1000Vdc, Attenuators Input:
			8~80Vdc, 15Amax per module, 15A max input
			short circuit. Attenuators Output: 8~80Vdc,
			15Amax, 800W max per module.
			Rapid shutdown time limit 15s.
			Initiated by the loss of AC power
Type-D	RSD-S-PLC-B	Transmitter-PLC-PCBA	System voltage 1500Vdc, Attenuators Input:
			8~80Vdc, 15Amax per module, 15A max input
			short circuit. Attenuators Output: 8~80Vdc,
			15Amax, 800W max per module.
			Rapid shutdown time limit 15s.
			Initiated by the loss of AC power

Model	Attenuators	Initiation Device	Inverter	System Ratings
APsmart's RSD	ALTENERGY	ALTENERGY	Shanghai CHINT	1000 Vdc
system, PVRSS:	POWER SYSTEM	POWER SYSTEM	Power Systems Co.,	maximum system
Sunspec	INC.	INC.	Ltd.	voltage.
	RSD-S-PLC-A	Transmitter-PLC	CPS SCA60KTL-	
	RSD-S-PLC-B	Transmitter-PLC-	DO/US-480	Rapid shutdown
	RSD-D-15-1000	PCBA	CPS SCA50KTL-	time limit 30s
	RSD-D-20-1000	Transmitter-PLC-1P	DO/US-480	with inverter.
	RSD-D-25-1000		CPS SCA36KTL-	
	RSD-D-15-1500		DO/US-480	Initiated by the
	RSD-D-20-1500		CPS SCA25KTL-DO-	loss of AC power.
	RSD-D-25-1500		R/US-480	
			CPS SCA20KTL-DO-	
			R/US-480	
			CPS SCA25KTL-	
			DO/US-208	
			Shanghai CHINT	600 Vdc
			Power Systems Co.,	maximum system
			Ltd.	voltage.
			Family series:	
			CPS ECH12KTL/US,	Rapid shutdown
			CPS ECH11.4KTL/US	time limit 30 s
			CPS ECH9.6KTL/US,	with inverter.
			CPS ECH7.6KTL/US,	
			CPS ECH6KTL/US,	Family series
			CPS ECH5KTL/US,	Initiated by
			CPS ECH3.8KTL/US	external
				emergency button
				with signal wire
				connected to the
				Inverter's ELV
				circuit.



T T	Т			1
			Delta Electronics	600 Vdc
			(Shanghai) Co., Ltd.	maximum system
			M10-4-TL-US	voltage.
			M10-TL-US	
			M8-TL-US	Rapid shutdown
			M6-TL-US	time limit 30s
			M5-TL-US	with inverter.
			M4-TL-US	
			E8-TL-US	Initiated by the
			E6-TL-US	loss of AC power.
			E4-TL-US	Î
		-	LG ELECTRONICS,	600 Vdc
			INC.	maximum system
			D007KEEN261	voltage.
			Dooriteer (201	, ortugo.
				Rapid shutdown
				time limit 30s
				with inverter.
				Initiated by the
				loss of AC power.
			Solectria Renewables,	1000 Vdc
			LLC	maximum system
			PVI 50TL-480	voltage.
			PVI 60TL-480	_
			PVI 20TL-480-R	Rapid shutdown
			PVI 25TL-480-R	time limit 30s
			PVI 25TL-208	with inverter.
			PVI-36TL-480-V2	
				Initiated by the
				loss of AC power.



JIANGSU GOODWE	600 Vdc
POWER SUPPLY	maximum system
TECHNOLOGY CO.,	voltage.
LTD.	voltage.
	Don'd shutdown
GW9600A-ES,	Rapid shutdown
GW8600A-ES,	time limit 30s
GW7600A-ES,	with inverter.
GW7000A-ES,	w 1.1 . 11 .1
GW6000A-ES,	Initiated by the
GW5000A-ES,	DC Switch on the
GW9600A-MS,	inverter.
GW8600A-MS,	
GW7600A-MS,	
GW7000A-MS,	
GW6000A-MS,	
GW5000A-MS,	
GW9600A-IS,	
GW8600A-IS,	
GW7600A-IS,	
GW7000A-IS,	
GW6000A-IS,	
GW5000A-IS	
GW9600H-ES,	
GW8600H-ES,	
GW7600H-ES,	
GW7000H-ES,	
GW6000H-ES,	
GW5000H-ES,	
	550 V.1.
Shenzhen Growatt	550 Vdc
New Energy	maximum system
Technology Co., Ltd	voltage.
SPH 3000TL BL-US,	D 111 1
SPH 3600TL BL-US,	Rapid shutdown
SPH 4000TL BL-US,	time limit 30s
SPH 4600TL BL-US,	with inverter.
SPH 5000TL BL-US,	
SPH 6000TL BL-US	Initiated by
	external
	emergency button
	with signal wire
	connected to the
	Inverter's ELV
	circuit.



Shenzhen Growatt	600 Vdc
New Energy	maximum system
Technology Co., Ltd	voltage.
MIN 8200TL-XH-US,	8
MIN 9000TL-XH-US,	Rapid shutdown
MIN 10000TL-XH-	time limit 30s
US,	with inverter.
MIN 11400TL-XH-	
US,	Initiated by
MIN 3000TL-XH-US,	external
MIN 3800TL-XH-US,	emergency button
MIN 5000TL-XH-US,	with signal wire
MIN 6000TL-XH-US,	connected to the
MIN 7600TL-XH-US	Inverter's ELV
MIN 70001E AII CB	circuit.
FIMER S.p.A.:	600 Vdc
1)UNO-DM-3.3-TL-	maximum system
PLUS-US-XYZ-ABC-	voltage.
DE-F,	voltage.
2) UNO-DM-3.8-TL-	Rapid shutdown
PLUS-US-XYZ-ABC-	time limit 30s
DE-F,	with inverter.
3) UNO-DM-4.6-TL-	***************************************
PLUS-US-XYZ-ABC-	Initiated by the
DE-F,	loss of AC power.
4) UNO-DM-5.0-TL-	loss of the power.
PLUS-US-XYZ-ABC-	
DE-F.	
(X: blank, S;	
Y = blank, B, E, Z;	
Z = blank, M;	
A = blank, X;	
B = blank, R;	
C = blank, A;	
D = blank, Q;	
E = blank, U;	
F = blank, C, F = blank, AP, TI)	
1' - Ulalik, AF, 11)	



FIMER S.p.A.:	600 Vdc
UNO-DM-6.0-TL-	maximum system
PLUS-US-XYZ-ABC-	voltage.
DE-F	
(X: blank, S;	Rapid shutdown
Y = blank, B, E, Z; Z	time limit 30s
= blank, M;	with inverter.
A = blank, X;	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
B = blank, R;	Initiated by the
C = blank, A;	loss of AC power
D = blank, Q;	loss of AC power
E = blank, U;	
F = blank, AP, TI	
Delta Electronics, Inc.	600 Vdc
E10_BDI	maximum system
E8_BDI	voltage.
E6_BDI	
E4_BDI	Rapid shutdown
E10-TL-US	time limit 30s
E8 Plus-TL-US	with inverter.
EC8-US	
EC6-US	Initiated by the
EC4-US	loss of AC power
	•
Shenzhen	600 Vdc
Eternalplanet Energy	maximum system
Pingshan Ltd.:	voltage.
HNA7W,	
HNA7W_TT,	Rapid shutdown
HNA7W_AT,	time limit 30s
HNA7G,	with inverter.
HNA7G_TT,	
HNA7G_AT	Initiated by
_	external
	emergency button
	with signal wire
	connected to the
	Inverter's ELV
	circuit.
	Cifcuit.
A.C. NI T	COO V.1.
Afore New Energy	600 Vdc
Technology	maximum system
Technology (Shanghai) Co., Ltd.:	
Technology (Shanghai) Co., Ltd.: AF9.6K-DH	maximum system voltage.
Technology (Shanghai) Co., Ltd.: AF9.6K-DH AF8.6K-DH	maximum system voltage. Rapid shutdown
Technology (Shanghai) Co., Ltd.: AF9.6K-DH	maximum system voltage.



Г	 T	1
	AF7K-DH	
	AF6K-DH	Initiated by
	AF5.5K-DH	external
	AF5K-DH	emergency button
	AF4.6K-DH	with signal wire
	AF4K-DH	connected to the
	AF3.6K-DH	Inverter's ELV
	AF3K-DH	circuit.
	CESC New Energy	600 Vdc
	Technology Co.,	maximum system
	Ltd.	voltage.
	Mars 3000 HVSP,	
	Mars 3600 HVSP,	Rapid shutdown
	Mars 4000 HVSP,	time limit 30s
	Mars 4600 HVSP,	with inverter.
	Mars 5000 HVSP,	
	Mars 5500 HVSP,	Initiated by
	Mars 6000 HVSP,	external
	Mars 7000 HVSP,	emergency button
	Mars 7600 HVSP,	with signal wire
	Mars 8000 HVSP,	connected to the
	Mars 8600 HVSP,	Inverter's ELV
	Mars 9600 HVSP.	
	Astron United Power	circuit.
		maximum system
	Energy Technology	voltage.
	Co., Ltd.	D '1 1 41
	AST3K-DH,	Rapid shutdown
	AST3.6K-DH,	time limit 30s
	AST4K-DH,	with inverter.
	AST4.6K-DH,	
	AST5K-DH,	Initiated by
	AST5.5K-DH,	external
	AST6K-DH,	emergency button
	AST7K-DH,	with signal wire
	AST7.6K-DH,	connected to the
	AST8K-DH,	Inverter's ELV
	AST8.6K-DH,	circuit.
	AST9.6K-DH.	
	AMPS MIDDLE	maximum system
	EAST FZ-LLC.	voltage.
	ES3KDHH,	-
	ES3.6KDHH,	Rapid shutdown
	ES4KDHH,	time limit 30s
	ES4.6KDHH,	with inverter.
	ES5KDHH,	
	ES5.5KDHH,	
	200.011111,	



ES6KDHH, ES7KDHH, ES7.6KDHH, ES8KDHH, ES8.6KDHH, ES9.6KDHH.	Initiated by external emergency button with signal wire connected to the Inverter's ELV circuit.
FOXESS CO., LTD.: H1-3.8-US, H1-5.7-US, H1-7.6-US, H1-9.6-US, H1-11.4-US.	600 Vdc maximum system voltage. Rapid shutdown time limit 30s with inverter.
	Initiated by external emergency button with signal wire connected to the Inverter's ELV circuit.
8 Star Energy North America Inc: Force 3.8DC Force 5.7DC Force 7.6DC	600 Vdc maximum system voltage.
Force 9.6DC Force 11.4DC	time limit 30s with inverter.
	Initiated by external emergency button with signal wire connected to the Inverter's ELV circuit.
Schneider Electric IT Corporation. Model: HY8K1NA1	600 Vdc maximum system voltage.
Model: HY8KINAI	Rapid shutdown time limit 30 s with inverter.



1	
	Inverter Initiated
	by external
	emergency button
	with signal wire
	connected to the
	Inverter's ELV
	circuit.
Star Charge Americas	600 Vdc
Corp.	maximum system
Conp.	voltage.
SI403LULA00,	, onage.
SI803LULA00,	Rapid shutdown
SI104LULA00	time limit 30s
SII04LULA00	with inverter.
	with inverter.
	Initiated by the
	Initiated by the
	DC Switch on the
D to Pi	inverter.
Delta Electronics, Inc.	480 Vdc
	maximum system
S12_BDI	voltage.
	Rapid shutdown
	time limit 30 s
	with inverter.
	Inverter Initiated
	by external
	emergency button
	with signal wire
	connected to the
	Inverter's ELV
	circuit.
General Motors	480 Vdc
Energy LLC.	maximum system
	voltage.
GM Energy Inverter	
e1.11	Rapid shutdown
	time limit 30 s
	with inverter.
	Inverter Initiated
	by external
	emergency button
	with signal wire
	connected to the



				Inverter's ELV circuit.
			Delta Electronics, Inc. E4_BX, E6_BX, E8_BX, E10_BX	450 Vdc maximum system voltage. Rapid shutdown time limit 30 s with inverter. Inverter Initiated by external emergency button with signal wire connected to the Inverter's ELV
APsmart's RSD system, PVRSS: Sunspec	ALTENERGY POWER SYSTEM INC. RSD-S-PLC-A RSD-S-PLC-B RSD-D-15-1000 RSD-D-20-1000 RSD-D-20-1500 RSD-D-15-1500	ALTENERGY POWER SYSTEM INC. Transmitter-PLC Transmitter-PLC-PCBA Transmitter-PLC-1P	Ginlong Technologies Co., Ltd. Solis-75K-5G-US, Solis-80K-5G-US, Solis-90K-5G-US, Solis-100K-5G-US, S5-GC75K-US, S5-GC80K-US, S5-GC90K-US, S5-GC100K-US.	circuit 1000 Vdc maximum system voltage. Rapid shutdown time limit 30s with inverter. Initiated by the loss of inverter power of AC Grid.
			CSI Solar Co., Ltd. CSI-75K-T480GL02- U, CSI-80K-T480GL02- U, CSI-90K-T480GL02- U, CSI-100K-T480GL02- U.	1000 Vdc maximum system voltage. Rapid shutdown time limit 30s with inverter. Initiated by the loss of inverter power of AC Grid.



APsmart's RSD	ALTENERGY	ALTENERGY	Jiangsu RCT Power	520 Vdc
system, PVRSS:	POWER SYSTEM	POWER SYSTEM	Energy Technology	maximum system
Sunspec	INC.:	INC.:	Co., Ltd:	voltage.
	RSD-S-PLC-A	Transmitter-PLC,	Power Storage DC	
	RSD-S-PLC-B	Transmitter-PLC-1P	US-8.0	Rapid shutdown
	RSD-D-15-1000			time limit 30s
	RSD-D-20-1000			with inverter.
	RSD-D-25-1000			
	RSD-D-15-1500			Initiated by the
	RSD-D-20-1500			disconnecting
	RSD-D-25-1500.			external AC
				breaker in the
				field.

Model	Attenuators	Initiation Device	Inverter	System Ratings
APsmart's RSD	ALTENERGY		Fronius International	600 Vdc
system, PVRSS:	POWER SYSTEM		GmbH	maximum
Sunspec	INC.		Fronius Symo	system voltage.
	RSD-S-PLC-A		Advanced 10.0-3 208-	
	RSD-S-PLC-B		240	Rapid shutdown
	RSD-D-15-1000		Fronius Symo	time limit 30s
	RSD-D-20-1000		Advanced 12.0-3 208-	with inverter.
	RSD-D-25-1000		240	
	RSD-D-15-1500			Initiated by the
	RSD-D-20-1500			loss of AC
	RSD-D-25-1500			power
			Fronius International	1000 Vdc
			GmbH	maximum
		Integrated in Fronius	Fronius Symo	system voltage.
		inverter as listed in	Advanced 15.0-3 480	
		the just right column	Fronius Symo	Rapid shutdown
		of this table	Advanced 20.0-3 480	time limit 30s
			Fronius Symo	with inverter
			Advanced 22.7-3 480	
			Fronius Symo	Initiated by the
			Advanced 24.0-3 480	loss of AC
				power
			Fronius International	600 Vdc
			GmbH	maximum
			Primo GEN24 3.8	system voltage.
			208-240	
			Primo GEN24 5.0	Rapid shutdown
			208-240	time limit 30s
			Primo GEN24 6.0	with inverter.
			208-240	



	T		
			Initiated by
			external buttons
			with signal wire
			connected to the
			WSD interface
			of the Inverter.
		Ginlong Technologies	1000 Vdc
		Co., Ltd.	maximum
		Solis-50K-US-SW;	system voltage.
		Solis-50K-US-LSW;	
		Solis-66K-US-F-SW;	Rapid shutdown
		Solis-66K-US-F-LSW;	time limit 30s
		Solis-60K-US-F-SW;	with inverter.
		Solis-60K-US-F-LSW;	
		Solis-50K-US-F-SW;	Initiated by the
	Integrated in Ginlong	Solis-50K-US-F-LSW;	loss of AC
	inverters as listed in the	Solis-40K-US-F-SW;	power
	just right column of this	Solis-40K-US-LSW;	
	table	Solis-40K-US-SW;	
		Solis-36K-US-SW;	
		Solis-36K-US-F-SW;	
		Solis-36K-US-LSW;	
		Solis-30K-US-F-SW;	
		Solis-30K-US-LSW;	
		Solis-30K-US-SW;	
		Solis-25K-US-SW;	
		Solis-25K-US-F-SW;	
		Solis-25K-US-LSW;	



Integrated in Ginlong inverters as listed in the just right column of this table	Ginlong Technologies Co., Ltd. Solis-1P10K-4G-US; Solis-1P9K-4G-US; Solis-1P8.6K-4G-US; Solis-1P8K-4G-US; Solis-1P7.6K-4G-US; Solis-1P7K-4G-US; Solis-1P6K-4G-US; Solis-1P6K2-4G-US; Solis-1P4K-4G-US; Solis-1P4K-4G-US; Solis-1P3.6K-4G-US; Solis-1P3K-4G-US; Solis-1P3K-4G-US; Solis-1P2K-4G-US; Solis-1P2K-4G-US; Solis-1P1K-4G-US;	600 Vdc maximum system voltage. Rapid shutdown time limit 30s with inverter. Initiated by the loss of inverter power of AC Grid.
Integrated in Ginlong inverters as listed in the just right column of this table		500 Vdc maximum system voltage. Rapid shutdown time limit 30s with inverter. Initiated by the loss of AC power
Integrated in Candian Solar inverters as listed in the just right column of this table	Canadian Solar Inc.: CSI-66K-T480GL01- UB, CSI-60K-T480GL01- UB, CSI-50K-T480GL01- UB, CSI-40K-T480GL01- UB, CSI-36K-T480GL01- UB, CSI-30K-T480GL01- UB, CSI-30K-T480GL01- UB,	1000 Vdc maximum system voltage. Rapid shutdown time limit 30s with inverter. Initiated by the loss of AC power



<u></u>	· · · · · · · · · · · · · · · · · · ·
	CSI-25KTL-GS-FLB,
	CSI-30KTL-GS-FLB,
	CSI-36KTL-GS-FLB,
	CSI-40KTL-GS-FLB,
	CSI-40KTL-GS-B,
	CSI-50KTL-GS-FLB,
	CSI-50KTL-GS-B,
	CSI-60KTL-GS-B,
	CSI-66KTL-GS-B

Model	Attenuators	Initiation Device	Inverter	System Ratings
APsmart Rapid	ALTENERGY	ALTENERGY	Manufacturer: SolaX	600 Vdc
Shutdown	POWER SYSTEM	POWER SYSTEM	Power Network	maximum
System, PVRSS:	INC.	INC.	Technology (Zhejiang)	system voltage.
Sunspec	RSD-S-PLC-A	Transmitter-PLC	Co., Ltd.	
	RSD-S-PLC-B			Rapid shutdown
	RSD-D-15-1000		Family series (1)	time limit 30 s
	RSD-D-20-1000		Models: A1-Hybrid-	with inverter.
	RSD-D-25-1000		6.0-US, A1-Hybrid-	
	RSD-D-15-1500		7.0-US, A1-Hybrid-	Family series
	RSD-D-20-1500		7.6-US, A1-Hybrid-	(1) Initiated by
	RSD-D-25-1500		8.6-US;	external
				emergency
			Family series (2)	button with
			Models: A1-6.0-US,	signal wire
			A1-7.0-US, A1-7.6-	connected to the
			US, A1-8.6-US	Inverter's ELV
				circuit.
				Family series
				(2) Initiated by
				the loss of AC
				Grid.



	Manufacturer: Hanhua	600 Vdc
	Q CELLS America	maximum
	Inc.	system voltage.
	Family series (1):	
	Q. HOME ⁺ HYB-G1-	Rapid shutdown
	X.X series, models:	time limit 30 s
	Q.HOME ⁺ HYB-G1-	with inverter.
	6.0, Q.HOME ⁺ HYB-	
	G1-7.0, Q.HOME+	Family series
	HYB-G1-7.6,	(1) Initiated by
	Q.HOME ⁺ HYB-G1-	external
	8.6;	emergency
		button with
	Family series (2):	signal wire
	Q.HOME ⁺ AC-G1-	connected to the
	X.X series, models:	Inverter's ELV
	Q.HOME ⁺ AC-G1-6.0,	circuit.
	Q.HOME ⁺ AC-G1-7.0,	
	Q.HOME ⁺ AC-G1-7.6,	Family series
	Q.HOME ⁺ AC-G1-	(2) Initiated by
	8.6;	the loss of AC
		Grid.

Note:

1. For details related to rating, size, configuration, etc., reference should be made to the CSA Certification Record, Certificate of Compliance Annex A, or the Descriptive Report.



APPLICABLE REQUIREMENTS

UL Std. No. 1741-Third Edition - Inverters, Converters, Controllers and Interconnection System Equipment

for Use With Distributed Energy Resources

(Third Edition, Dated May 19, 2023)

CSA C22.2 No. 330-23 - Photovoltaic rapid shutdown systems

Note: Photovoltaic Rapid Shutdown Function has also been evaluated according to CEC Code, Part I, Rule 64-218; NEC-2017, NEC-2020 and NEC-2023 Section 690.12 applicable requirement.

Notes:

Products certified under Class C531109 have been certified under CSA's ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). www.scc.ca

